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DATE: **May 26, 2009**   JOB CODE:

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Client/Matter No.:	**United States Patent Application No. 09/265,493** **Attorney Docket No.: MSFT-1167/191769.01**
Sender's Name:	**Masako Calico for Michael Swope**
Pages to Follow:	**9**

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COVER MESSAGE:

Thank you for scheduling a telephonic interview for <u>**Friday, May 29 at 2:15pm (ET)**</u>/ 11:15am (PT) to discuss the Office Action dated March 16, 2009. Please see the attached proposed amendment as the interview agenda.

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This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.   (Currently amended) ~~In a computer graphics system,~~ a A method <u>for use a</u> <u>computer graphics system</u> for applying texture mapping in per-pixel operations, the method comprising:

receiving a plurality of parameters that are used to define a pixel value at a pixel in a primitive;

selecting parameters from the plurality of parameters to generate selected parameters and unselected parameters where the unselected parameters are the plurality of parameters that are not selected;

substituting a texture value from a texture map in place of at least one selected parameter used in an algorithm that uses the selected parameters, the texture value varying over the primitive;

determining the pixel value by using the unselected parameters and the texture value varying over the primitive, wherein the set of unselected parameters are not a texture value and the texture value is associated with the selected parameters; and

storing the generated pixel value in a frame buffer.

2.   (Previously presented) The method as recited in claim 1, further comprising: displaying the pixel according to the determined pixel value on a display device.

3.   (Original) The method as recited in claim 1, wherein the plurality of parameters includes per-primitive parameters, which are defined over the entire primitive.

4.   (Original) The method as recited in claim 1, wherein the primitive is a polygon.

5.   (Original) The method as recited in claim 1, wherein the plurality of parameters includes both scalar and vector parameters.

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6.   (Original) The method as recited in claim 3, wherein the plurality of parameters includes one or more of emission material color, ambient material color, global ambient light color, attenuation factor, ambient light color, diffuse material color, diffuse light color, specular material color, specular light color, a surface normal vector, a specular exponent, an environment map color, and a shadow color.

7.   (Previously presented) The method as recited in claim 1, comprising determining the texture value further comprises the operations of:

receiving texture coordinates for accessing a set of texture maps; and

accessing the texture maps in response to the texture coordinates to generate the texture value.

8.   (Previously presented) The method as recited in claim 7, wherein the accessed textures includes a plurality of texture elements, the method further comprising the operation of:

filtering accessed texture elements of the texture map onto the selected pixel to generate the texture value associated with the pixel.

9.   (Previously presented) The method as recited in claim 1, wherein a light value is generated for the pixel value by evaluating a lighting equation that is defined in terms of the substituted texture value from the texture map.

10.   (Currently amended) A device for generating per-pixel values of pixels in a primitive by using texture parameters, the pixel values of the pixels in the primitive being partially defined by a plurality of parameters, where a pixel value is not such a parameter, the device comprising:

a texture memory for storing a set of texture maps;

a texture unit for receiving texture coordinates for accessing a set of selected texture maps in the texture memory, the set of selected texture maps being associated with a set of selected parameters wherein the selected parameters are selected from among the plurality of parameters that partially define a pixel value in the primitive, the texture unit generating a

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texture value associated with the pixel from each of the selected texture maps, and wherein at least one other parameter in the plurality of parameters are not selected and the at least one other parameter that is not selected from the plurality of parameters define a set of unselected parameters; and

a rendering unit for generating the pixel value in response to the generated texture values and the set of unselected parameters;

and a frame buffer in communication with said rendering unit, said frame buffer accepting said generated pixel value for storage.

11.   (Original) The device as recited in claim 10, wherein the primitive is a polygon.

12.   (Original) The device as recited in claim 10, wherein one or more of the selected parameters are selected from a parameter group consisting of emission material color, ambient material color, global ambient light color, attenuation factor, ambient light color, diffuse material color, diffuse light color, specular material color, specular light color, a surface normal vector, a specular exponent, an environment map color, and a shadow color.

13.   (Original) The device as recited in claim 10, wherein the plurality of parameters includes both scalar and vector parameters.

14.   (Original) The device as recited in claim 10, wherein the pixel value is a light value that is generated by evaluating a lighting equation using the plurality of parameters.

15.   (Currently amended) A computer graphics system for generating per-pixel values for pixels in a primitive by using texture parameters, the pixel values being defined by a plurality of parameters, the system comprising:

a bus;

a processor coupled to a the bus;

a main memory coupled to the bus;

a storage unit coupled to the bus; and

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   a graphics subsystem coupled to receive a plurality of parameters defining the pixel
values for the pixels in the primitive, the graphics subsystem including:

   means for selecting parameters from the plurality of parameters to generate selected
parameters and unselected parameters where the unselected parameters are the plurality of
parameters that are not selected;

   means for substituting a texture value from a texture map in place of at least one
selected parameter used in an algorithm that uses the selected parameter to determine a pixel
value, the texture value varying over the primitive; and

   means for determining the pixel value by using the unselected parameters and the
texture value varying over the primitive, wherein the set of unselected parameters are not a
texture value and the texture value is associated with the selected parameters;

   and a frame buffer in communication with said rendering unit, said frame buffer
accepting said generated pixel value for storage.

   16. (Original) The system as recited in claim 15, wherein one or more of the
selected parameters are selected from a parameter group consisting of emission material
color, ambient material color, global ambient light color, attenuation factor, ambient light
color, diffuse material color, diffuse light color, specular material color, specular light color,
a surface normal vector, a specular exponent, an environment map color, and a shadow color.

   17. (Original) The system as recited in claim 15, wherein the plurality of
parameters includes both vector and scalar parameters.

   18. (Previously presented) The system as recited in claim 15, wherein the pixel
value is a light value that is generated by evaluating a lighting equation using the substituted
texture value from the texture map.

   19. (Original) The system as recited in claim 15, wherein the primitive is a
polygon.

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      20.   (Previously presented) The system as recited in claim 15, comprising means for determining a texture value by filtering an accessed set of texture maps to generate texture values.

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REMARKS

Claims 1-20 are pending in the application. Claims 1, 10 and 15 are the independent claims. Claims 1-9 stand rejected. Claims 10-20 are objected to.

Specification

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter.

The Office maintains that the limitation found in claims 6, 12, and 16 "a surface normal vector" is not found in the specification.

Applicants respectfully disagree. As previously indicated, the phrase is clearly described at least on page 5 of the specification. The meaning of the phrase is clearly "ascertainable by reference to the description." 37 C.F.R. § 1.75(d)(1). Moreover, the same language appeared in original claim 6. Original claim 6 formed part of the specification. See MPEP 608.01(o).

In the most recent rejection, the Office addressed the Applicants' arguments and indicated that:

> Page 5 line 2 lists "N = outward surface normal vector at a
> pixel" which is different narrow than the claimed "a surface
> normal vector". The argument concerning the objection to the
> specification is not persuasive because the list of parameters on
> pages 4 and 5 includes "outward surface normal vector at the
> pixel" while claim 6 with reference to claim 3 lists a surface
> normal vector. A parameter for a pixel discussed in the
> background of the invention at pages 4 and 5 is different than a
> parameter for a vertex discussed in the detailed specification at
> page 12, thus, the background description cannot be used to
> provide proper antecedent basis for the claimed subject matter
> due to the differences in words used in the claim and the
> background of the invention.

Action p. 2. However, by citing the section of the specification, the applicant demonstrated that consistent terminology was used in the specification and the claims, whether or not the surface normal vector applied to a pixel or a primitive. Moreover, and more importantly, the Office's analysis incorrectly states the law and misapplied the MPEP.

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Notably, the Office's Response to Arguments did not address a very fundamental

point raised by the Applicants: **original claims form part of the specification.** Thus,

because claim 6, for example, is an original claim, surface normal vector was included in the

specification as originally filed and the claim has proper support whether or not that support

is also listed earlier in the specification. See MPEP § 608.01(o).

The Office also cites to MPEP § 608.01(o), but that very section of the MPEP makes

clear that it is referencing new claims and claim amendments in clear contrast to an original

claim, which *is* part of the specification. This point is amply illustrated by the highlighted

portions of that section of the MPEP as reproduced below:

> Usually the terminology of the original claims follows the
> nomenclature of the specification, but *sometimes in amending
> the claims or in adding new claims, new terms are introduced
> that do not appear in the specification.* The use of a confusing
> variety of terms for the same thing should not be permitted.
>
> *New claims and amendments to the claims already in the
> application should be scrutinized* not only for new matter but
> also for new terminology. While an applicant is not limited to
> the nomenclature used in the application as filed, he or she
> should make appropriate amendment of the specification
> *whenever this nomenclature is departed from by amendment
> of the claims* so as to have clear support or antecedent basis in
> the specification for the *new terms appearing in the claims.*
> This is necessary in order to insure certainty in construing the
> claims in the light of the specification, *Ex parte Kotler*, 1901
> C.D. 62, 95 O.G. 2684 (Comm'r Pat. 1901). See 37 CFR 1.75,
> MPEP § 608.01(i) and § 1302.01. Note that *examiners should
> ensure that the terms and phrases used in claims presented
> late in prosecution of the application* (including claims
> amended via an examiner's amendment) find clear support or
> antecedent basis in the description so that the meaning of the
> terms in the claims may be ascertainable by reference to the
> description, see 37 CFR 1.75(d)(1). *If the examiner determines
> that the claims presented late in prosecution* do not comply
> with 37 CFR 1.75(d)(1), applicant will be required to make
> appropriate amendment to the description to provide clear
> support or antecedent basis for the terms appearing in the
> claims provided no new matter is introduced.

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MPEP § 608.01(o) (Bold italics added). The MPEP could not be more clear. Original claim
language is part of the specification. MPEP § 608.01 describes antecedent basis problems
that arise from presenting *new* claims or claim *amendments* to an original claim. That is not
the fact in the present application.

Reconsideration is respectfully requested.

Claim Objections

Claims 1-20 stand objected to because of informalities. The Office asserts that a
coma or semicolon is needed in claim 1 at line 9 after "parameters", claim 10 at line 9 after
"primitive", and claim 15 at line 15 after "value."

Applicants have amended the claims to correct the informalities.

Claims 2-9 stand objected to under 37 CFR 1.75(c), as being of improper dependent
form for failing to further limit the subject matter of a previous claim. Applicants disagree but
have nevertheless amended claim 1 to address the issue.

Claim Rejections - 35 USC §112

Claims 1-9 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite
for failing to particularly point out and distinctly claim the subject matter which applicant
regards as the invention.

The Office asserts that:

> These claims claim "In a computer graphics system and "a
> method for applying ... the method comprising", thus, these
> claims are unclear if the invention is a machine of a process.

Action. p. 4-5. Applicants respectfully disagree. Nevertheless, the claim was amended to
recite more clearly that the claim recites a method tied to a computer graphics system.
Reconsideration is respectfully requested.

Claim Rejections - 35 USC § 101

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Claims 1-9 stand rejected under 35 U.S.C. 101 because the claimed invention is purportedly directed to non-statutory subject matter. The Office alleges two bases for the 101 rejection. First, the Office essentially reasserts the rejection above that was made under § 112:

> These claims claim in parent claim 1 "In a computer graphics system" and "a method for applying ... the method comprising", thus, these claims are unclear if the invention is a machine or a process.

Action. 5-6. Applicants again disagree and submit that this is not a proper basis for a § 101 rejection. Nevertheless, the amendment made to claim 1 clarifies any ambiguity that the Office may allege.

Second, the Office asserts that the claim is not tied to a machine nor transforms underlying subject matter to a different state or thing. Applicants disagree and submit that the language "In a computer graphics system" clearly tied the claimed method to a machine. However, Applicants further clarified that the method is or use in a machine. The amended language similarly passes muster under § 101. Additionally, the claim teaches the transformation of texture values, for instance, into a pixel value and therefore recite a transformation of subject matter.

Reconsideration and withdrawal of the rejection is respectfully requested.

Allowable Subject Matter

Applicants acknowledge and thank the examiner for recognizing the allowability of claims 10-20. Applicants submit that all objections to those claims are overcome.